BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

AMPLIFICATEUR DE PUISSANCE PONTABLE A QUATRE VOIES

ENGLISH

# GM-X624

## Owner's Manual
## Mode d'emploi

PIONEER®

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This product complies with the EMC Directives (89/336/EEC, 92/31/EEC) and CE Marking Directive (93/68/EEC).

Thank you for purchasing this PIONEER product. Before attempting operation, be sure to read this manual.

## In case of trouble

When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station.

## WARNING

- Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the battery wire directly to the car battery positive terminal (+) and the ground wire to the car body.
- Do not touch the amplifier with wet hands. Otherwise you may get an electric shock. Also, do not touch the amplifier when it is wet.
- For traffic safety and to maintain safe driving conditions, keep the volume low enough so that you can still hear normal traffic sound.
- Check the connections of the power supply and speakers if the fuse of the battery wire (sold separately) or the amplifier fuse blows. Detect the cause and solve the problem, then replace the fuse with another one of the same size and rating.
- To prevent malfunction of the amplifier and speakers, the protective circuit will cut the power supply to the amplifier (sound will stop) when an abnormal condition occurs. In such a case, switch the power to the system OFF and check the connection of the power supply and speakers. Detect the cause and solve the problem.
- Contact the dealer if you cannot detect the cause.
- To prevent an electric shock or short-circuit during connection and installation, be sure to disconnect the negative (–) terminal of the battery beforehand.
- Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Be sure to protect all cables and important equipment such as fuel lines, brake lines and the electrical wiring from damage.

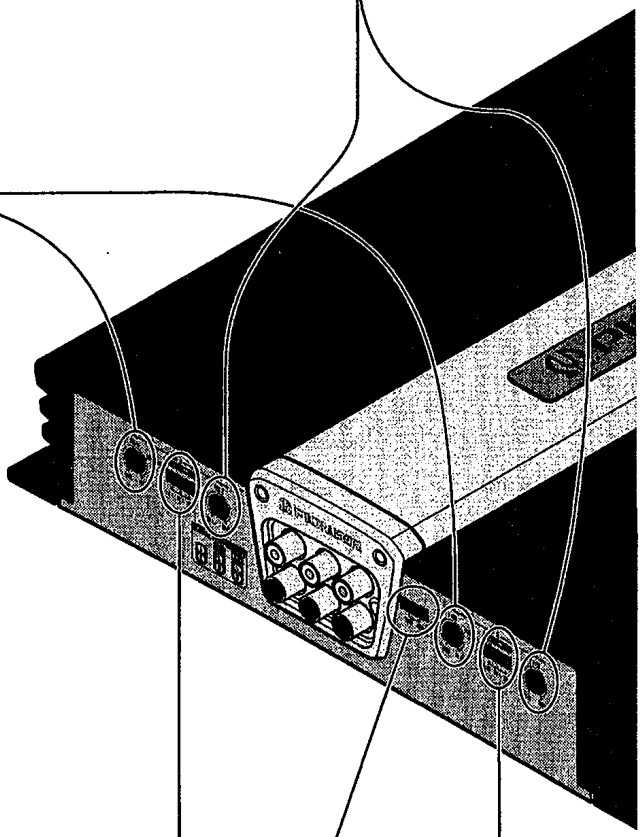
## Gain Control

Adjusting the gain controls A and B will help match the output of the car stereo to the Pioneer amplifier. Normally, set the switch to the "NORMAL" position. If the output is low, even when the volume of the car stereo is turned up, turn these controls clockwise. If there is distortion when the volume of the car stereo is turned up, turn these controls counter-clockwise.

- If you only use one input plug, set the gain controls for speaker outputs A and B to the same position.
- Set the gain control to "NORMAL" when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound level is too low or distorts, adjust the gain control.
- Adjust the gain control to the "MIN" side of "NORMAL" when this amplifier is connected to a Pioneer car stereo (High voltage output type).

## Cut Off Frequency Control

If the LPF/HPF select switch is set to LPF or HPF, you can select a cut off frequency from 50 to 120 Hz.

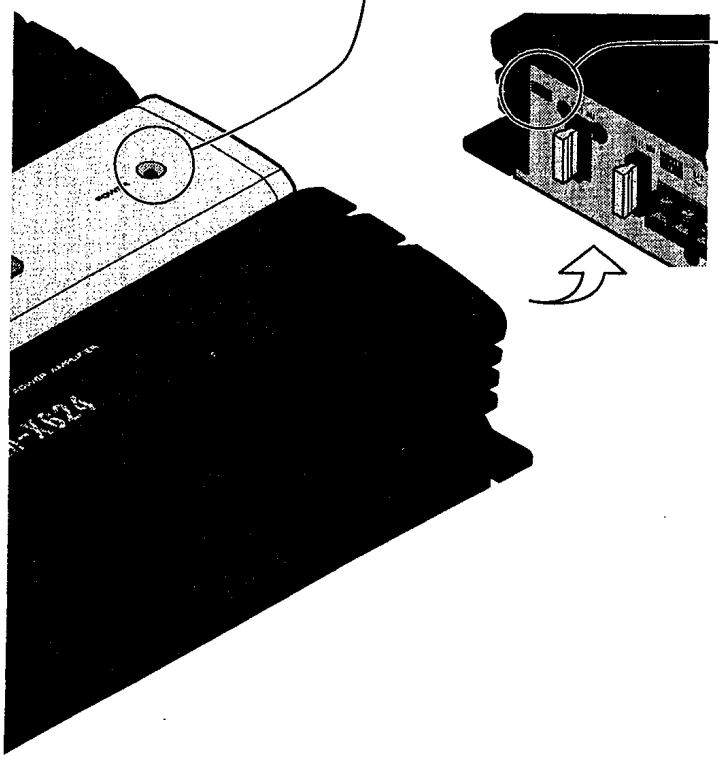


## RCA Input Select Switch

For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.

## Power Indicator

The power indicator lights when the power is switched on.



## BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an AM broadcast with your car stereo, change the BFC switch using a small screwdriver.

## LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

| LPF/HPF Select Switch | Audio frequency range to be output | Speaker Type | Remarks |
|---|---|---|---|
| LPF (Left) | * — 50 to 120 Hz | Sub-woofer | Connect a sub-woofer. |
| OFF (Center) | Full range | Full range | |
| HPF (Right) | * 50 to 120 Hz — | Full range | Use if you want to cut the very-low-frequency range* because it is not necessary for the speakers you are using. |

* See the "Cut Off Frequency Control" section.

## CAUTION

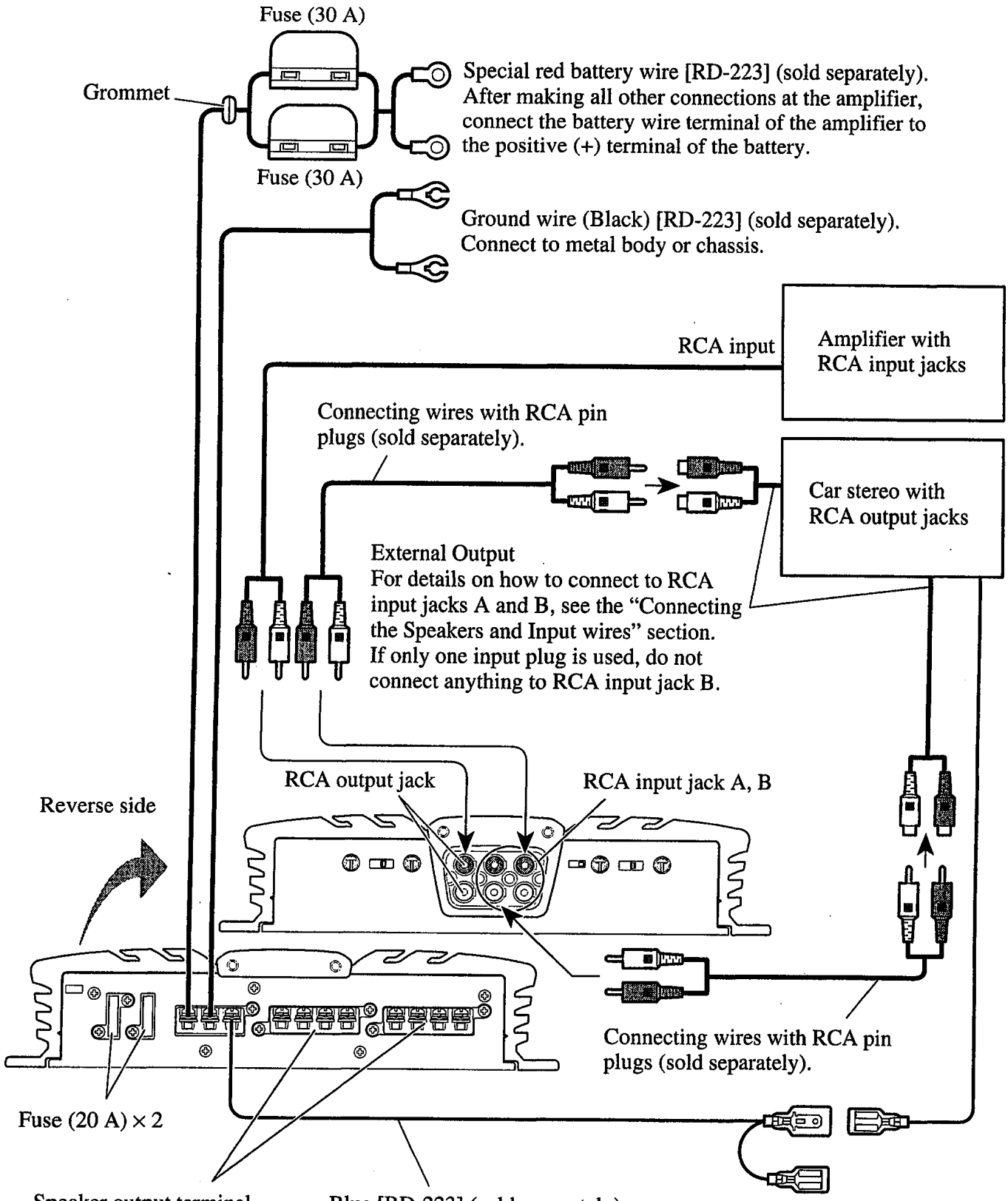
- Disconnect the negative (-) terminal of the battery to avoid the risk of short-circuit and damage to the unit.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.
- Make sure that wires will not interfere with moving parts of the vehicle, such as the gearshift, handbrake or seat sliding mechanism.
- Do not shorten any wires. Otherwise the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply wire to tap from the wire. The current capacity of the wire will be exceeded, causing overheating.

## To prevent damage

- Do not ground the speaker wire directly or connect a negative (–) lead wire for several speakers.
- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.
- If the blue wire of the amplifier is connected to the power terminal through the ignition switch (12 V DC), the amplifier will always be on when the ignition is on— regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idle.
- Install and route the battery wire (sold separately) as far away as possible from the speaker wires. Install and route the battery wire (sold separately) and ground wire, speaker wires, and the amplifier as far away as possible from the antenna, antenna cable and tuner.
- Speakers to be connected to the amplifier should conform with the standards listed below. Otherwise damage will occur to the speaker. The speaker impedance must be 1 to 8 ohms. (2 to 8 Ω for stereo, monaural and other bridge connections.)

| Speaker Channel | Speaker Type | Power |
|---|---|---|
| Four-channel | Sub-woofer | Nominal input: Min. 50 W |
| | Other than sub-woofer | Max. input: Min. 100 W |
| Two-channel | Sub-woofer | Nominal input: Min. 120 W |
| | Other than sub-woofer | Max. input: Min. 240 W |
| Three-channel Speaker output A | Sub-woofer | Nominal input: Min. 50 W |
| | Other than sub-woofer | Max. input: Min. 100 W |
| Three-channel Speaker output B | Sub-woofer | Nominal input: Min. 120 W |
| | Other than sub-woofer | Max. input: Min. 240 W |

## Connection Diagram

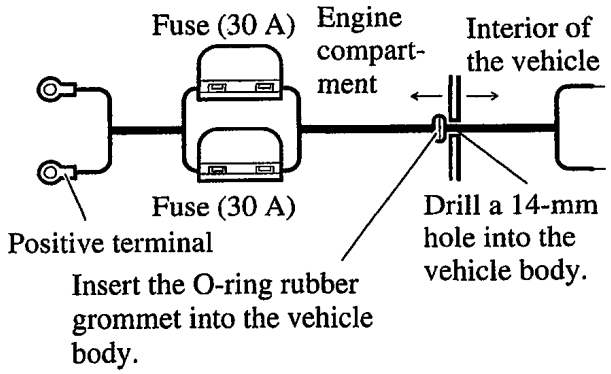

Fuse (30 A)
Grommet
Special red battery wire [RD-223] (sold separately). After making all other connections at the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
Fuse (30 A)
Ground wire (Black) [RD-223] (sold separately). Connect to metal body or chassis.
RCA input
Amplifier with RCA input jacks
Connecting wires with RCA pin plugs (sold separately).
Car stereo with RCA output jacks
External Output
For details on how to connect to RCA input jacks A and B, see the "Connecting the Speakers and Input wires" section.
If only one input plug is used, do not connect anything to RCA input jack B.
RCA output jack
RCA input jack A, B
Reverse side
Connecting wires with RCA pin plugs (sold separately).
Fuse (20 A) × 2
Speaker output terminal
See the "Connecting the Speakers and Input wires" section for speaker connection instructions.
Blue [RD-223] (sold separately).
Connect the male terminal of this wire to the blue wire of the car stereo (SYSTEM REMOTE CONTROL). The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo does not have a system remote control terminal, connect the male terminal to the power terminal through the ignition switch.

## Connecting the Power Terminal

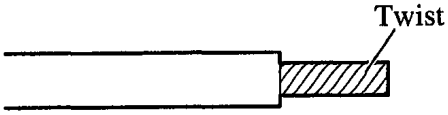
- Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the battery wire directly to the car battery positive terminal (+) and the ground wire to the car body.

### 1. Pass the battery wire from the engine compartment to the interior of the vehicle.

- After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.

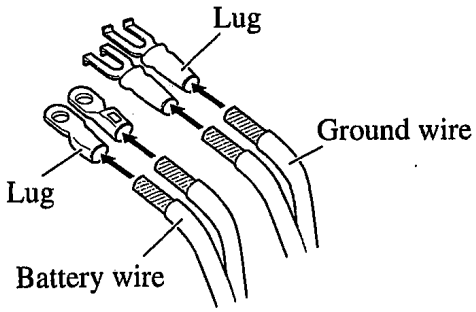

Fuse (30 A)
Engine compart-ment
Interior of the vehicle
Fuse (30 A)
Positive terminal
Drill a 14-mm hole into the vehicle body.
Insert the O-ring rubber grommet into the vehicle body.

### 2. Twist the battery wire, ground wire and system remote control wire.



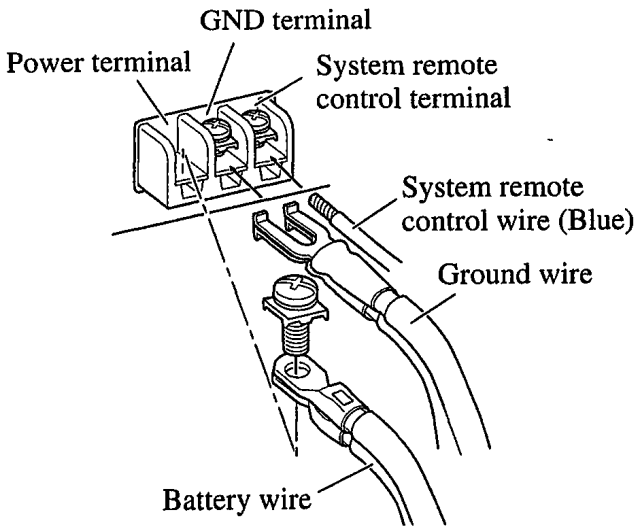

### 3. Attach lugs to wire ends. Lugs not supplied.

- Use pliers, etc., to crimp lugs to wires.



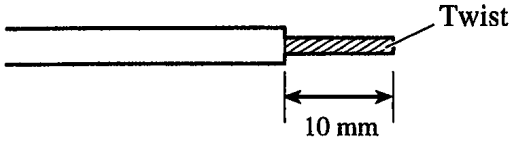

### 4. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.

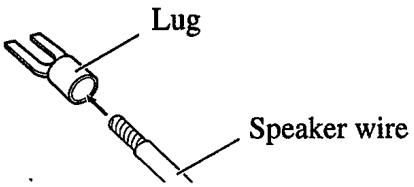


## Connecting the Speaker Output Terminals

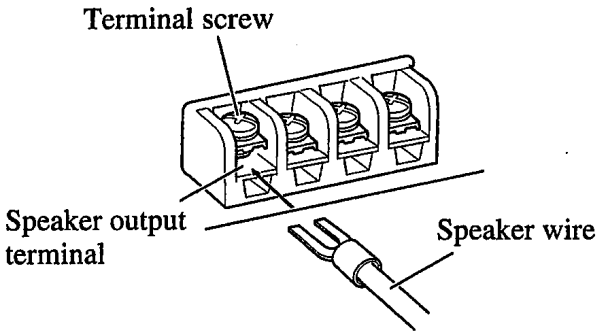
1. **Expose the end of the speaker wires by about 10 mm and twist using nippers or a cutter.**




2. **Attach lugs to speaker wire ends. Lugs not supplied.**
   - Use pliers, etc., to crimp lugs to wires.




3. **Connect the speaker wires to the speaker output terminals.**
   - Fix the speaker wires securely with the terminal screws.

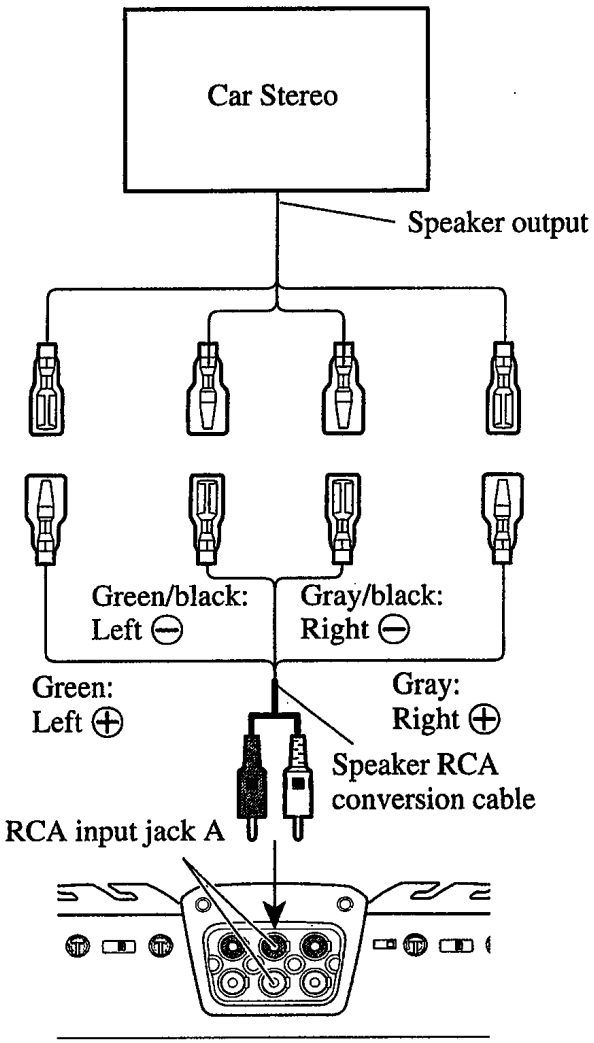



## Using the Speaker-RCA conversion cable

Using this conversion cable lets you connect your car stereo speaker outputs to this unit's RCA inputs.

- When using two channels from car stereo, be sure to connect the conversion cable to RCA input jack A and set RCA Input select switch to the left.
- When using four channels from car stereo, also connect the second conversion cable to input jack B and set RCA Input select switch to the right.

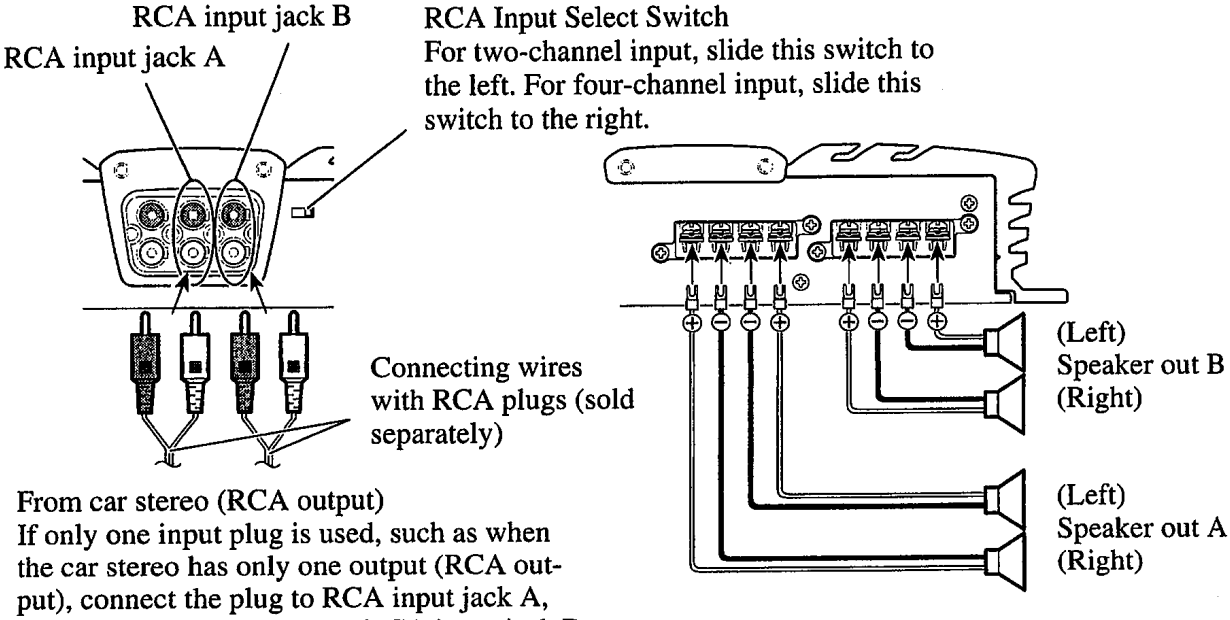
### ■ Connections when using a RCA conversion cable



## Connecting the Speakers and Input wires

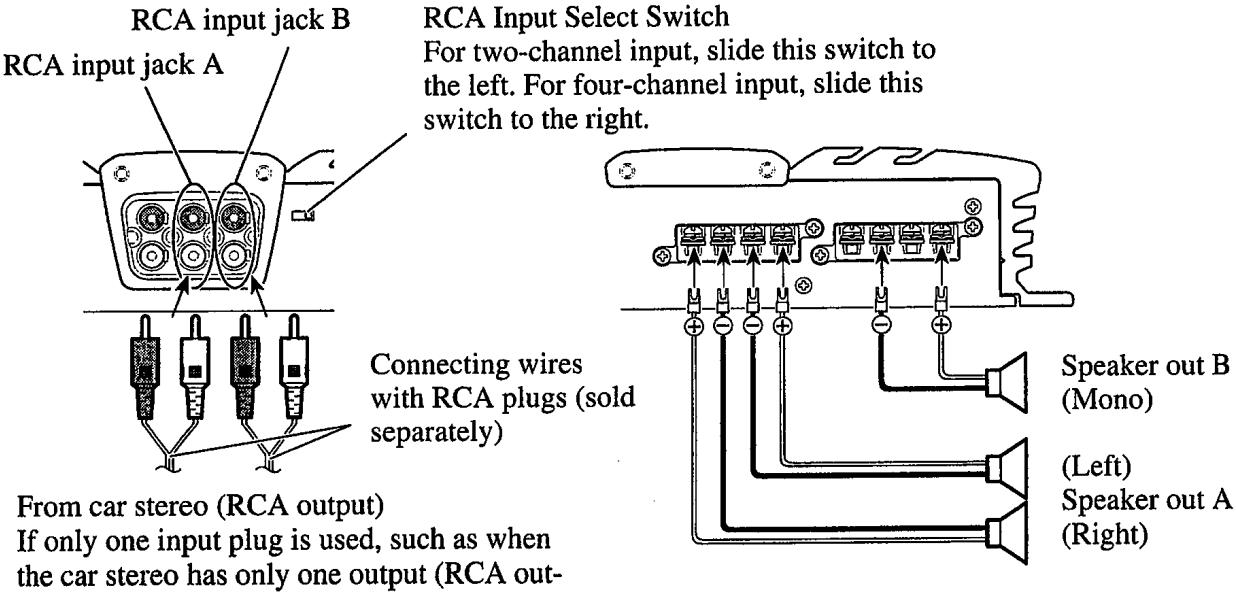
The speaker output mode can be four-channel, three-channel (stereo + mono) or two-channel (stereo, mono). Connect the speakers according to figures on the following pages.

### Four-channel mode


RCA input jack B
RCA input jack A
RCA Input Select Switch
For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
Connecting wires with RCA plugs (sold separately)
(Left)
Speaker out B
(Right)
(Left)
Speaker out A
(Right)

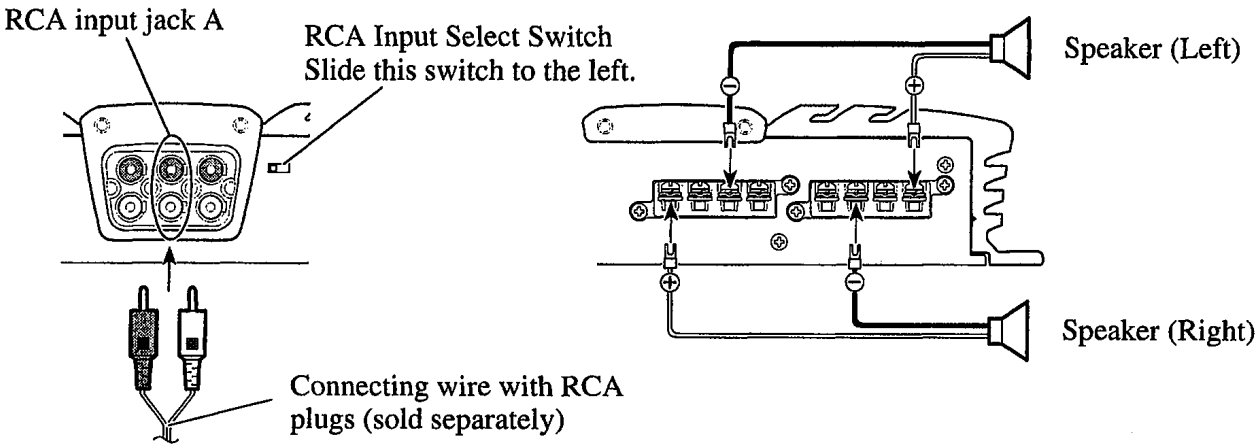
From car stereo (RCA output)
If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input jack A, but do not connect a plug to RCA input jack B.

### Three-channel mode

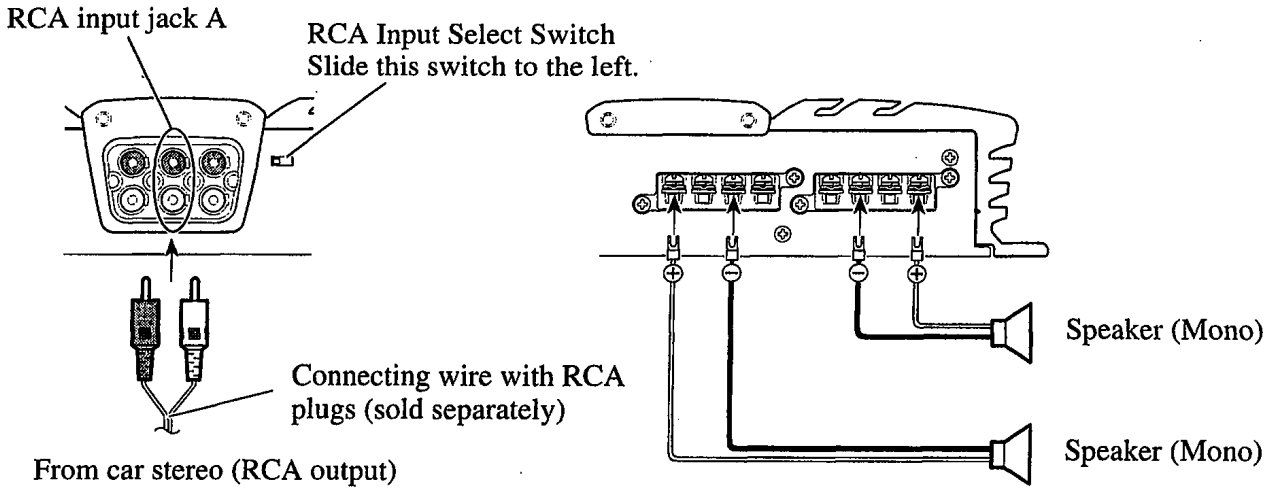

RCA input jack B
RCA input jack A
RCA Input Select Switch
For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.
Connecting wires with RCA plugs (sold separately)
Speaker out B
(Mono)
(Left)
Speaker out A
(Right)

From car stereo (RCA output)
If only one input plug is used, such as when the car stereo has only one output (RCA output), connect the plug to RCA input jack A, but do not connect a plug to RCA input jack B.

## Two-channel mode (Stereo)


RCA input jack A
RCA Input Select Switch
Slide this switch to the left.
Speaker (Left)
Speaker (Right)
Connecting wire with RCA plugs (sold separately)
From car stereo (RCA output)

## Two-channel mode (Mono)


RCA input jack A
RCA Input Select Switch
Slide this switch to the left.
Speaker (Mono)
Speaker (Mono)
Connecting wire with RCA plugs (sold separately)
From car stereo (RCA output)

## CAUTION

- Do not install in:
  —Places where it could injure the driver or passengers if the vehicle stops suddenly.
  —Places where it may interfere with the driver, such as on the floor in front of the driver's seat.
- Make sure that wires are not caught in the sliding mechanism of the seats, resulting in a short-circuit.
- Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Protect all cables and important equipment such as fuel lines, brake lines and electrical wiring from damage.
- Install tapping screws in such a way that the screw tip does not touch any wire. This is important to prevent wires from being cut by vibration of the car, which can result in fire.
- To prevent electric shock, do not install the amplifier in places where it might come in contact with liquids.
- To ensure proper installation, use the supplied parts in the manner specified. If any parts other than the supplied ones are used, they may damage internal parts of the amplifier, or they may become loose causing the amplifier to shut down.

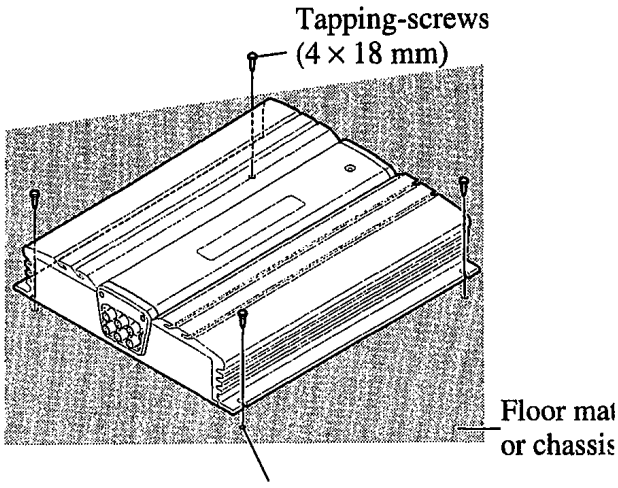
## To prevent malfunction

- To ensure proper heat dissipation of the amplifier, be sure of the following during installation.
  —Allow adequate space above the amplifier for proper ventilation.
  —Do not cover the amplifier with a floor mat or carpet.
- Do not install the amplifier near a door where it may get wet.
- Do not install the amplifier on unstable places such as the spare tire board.
- The best location for installation differs with the car model and installation location. Secure the amplifier at a sufficiently rigid location.
- Make temporary connections first and check that the amplifier and the system operate properly.
- After installing the amplifier, confirm that the spare tire, jack and tools can be easily removed.

## Example of installation on the floor mat or on the chassis

**1. Place the amplifier where it is to be installed. Insert the supplied tapping screws (4 × 18 mm) into the screw holes. Push on the screws with a screwdriver so they make marks where the installation holes are to be located.**

**2. Drill 2.5-mm diameter holes at the point marked, and install the amplifier, either on the carpet or directly to the chassis.**



# *Specifications*



| | |
|---|---|
| Power source | 14.4 V DC (10.8 — 15.1 V allowable) |
| Grounding system | Negative type |
| Current consumption | 29 A (at continuous power, 4 Ω) |
| Average current drawn* | 8 A (4 Ω for four channels) |
| | 12.5 A (4 Ω for two channels) |
| Fuse | 20 A × 2 |
| Dimensions | 255 (W) × 61 (H) × 310 (D) mm |
| Weight | 4.1 kg (Leads for wiring not included) |
| Maximum power output | 100 W × 4 / 240 W × 2 (EIAJ) |
| Continuous power output | 75 W × 4 / 200 W × 2 (DIN45324, +B=14.4 V) |
| Load impedance | 4 Ω (1 — 8 Ω allowable) |
| | (Bridge connection: 2 — 8 Ω allowable) |
| Frequency response | 10 — 50,000 Hz (+0 dB, –1 dB) |
| Signal-to-noise ratio | 105 dB (IEC–A network) |
| Distortion | 0.004% (10 W, 1 kHz) |
| Separation | 70 dB (1 kHz) |
| Low pass filter | Cut off frequency: 50 — 120 Hz |
| | Cut off slope: –12 dB/oct |
| High pass filter | Cut off frequency: 50 — 120 Hz |
| | Cut off slope: –12 dB/oct |
| Input level / impedance | RCA: 0.4 — 4.0 V/22 kΩ |
| | Speaker: 1.6 — 10 V/78 kΩ |

## Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

## *Average current drawn

- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.